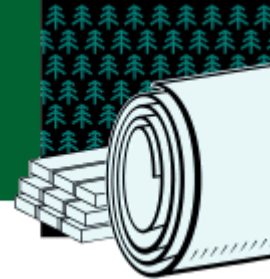


FOREST PRODUCTS

Project Fact Sheet



LOW TEMPERATURE OXIDATION OF VOLATILE ORGANIC COMPOUNDS

BENEFITS

- Reduces emissions of VOCs without significant additional expenses
- Avoids the controls and ductwork required for a central thermal oxidizer
- Lowers overall emissions at pulp mills

APPLICATIONS

The pulp and paper industry is mandated to reduce the hazardous by-products of its operations. This new technique will be applicable to all the facilities where VOCs are emitted and must be controlled.

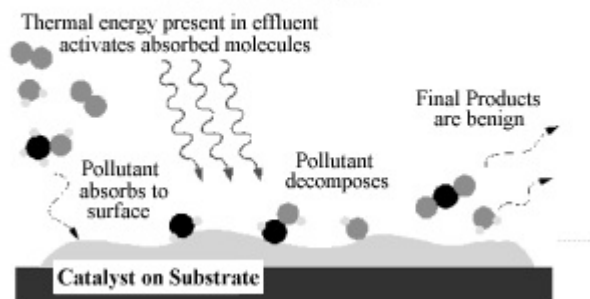
Catalyst Can Destroy Nearly 100 Percent of Methanol and Other VOCs Released During Pulping

During the pulping of wood to make paper, lignin (an organic polymer that helps form the walls of woody plant cells and the glue between cells) must be broken down to achieve high-quality paper. This is a primary source of volatile organic compounds (VOCs), especially methanol, toxins that must be controlled to meet environmental regulations. The Department of Energy and the National Renewable Energy Laboratory (NREL) cooperated to develop a catalytic system that oxidizes more than 99 percent of the methanol and other VOCs in pulp mill emissions.

The new technology reduces VOC emissions without increasing energy use and without large increases in operating expenses. Simple treatment of diffuse and fugitive emissions at pulp mills will lower the total emissions of the facilities without the complicated systems associated with a central thermal oxidizer.



Destruction of Volatile Organic Compounds Without Combustion



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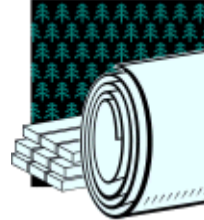
PROJECT DESCRIPTION

Goal: To identify the optimal reactor temperature and learn the effects that VOCs and moisture have on a catalytic system with the potential to oxidize hazardous volatile organic compounds that form in pulping mills during the delignification process.

The National Renewable Energy Laboratory identified a catalyst capable of destroying more than 99 percent of methanol at 150oC at residence times comparable to conventional catalytic incinerators. After identifying the optimal temperature at which the catalyst reacted with VOCs, the catalyst will be incorporated into a reactor that minimizes pressure drop while maintaining high destruction efficiency. A small pilot-scale system will then be built for testing in an operating mill to investigate its performance in field conditions.

PROGRESS & MILESTONES

- Studies of the catalyst were successfully completed.



PROJECT PARTNERS

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